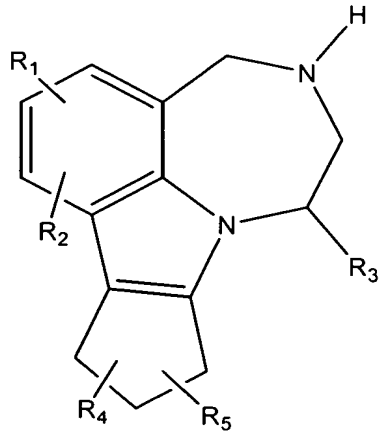
Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently amended) A process for preparing compounds of the formula:

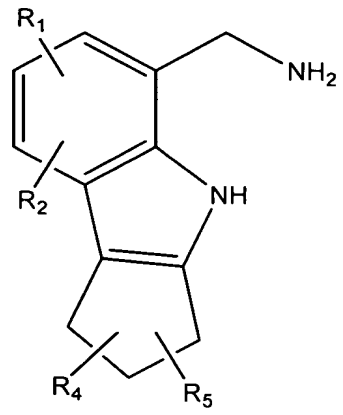


wherein:

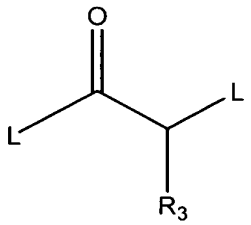
R_1, R_2, R_4 and R_5 are each independently, hydrogen, hydroxy, alkyl of 1-6 carbon atoms, cycloalkyl, alkoxy of 1-6 carbon atoms, halogen, fluorinated alkyl of from 1 to 6 carbon atoms, -CN, -NH-SO_2-alkyl of 1-6 carbon atoms, -SO_2-NH-alkyl of 1-6 carbon atoms, alkyl amide of 1-6 carbon atoms, amino, alkylamino of 1-6 carbon atoms, dialkylmino of 1-6 carbon atoms per alkyl moiety, fluorinated alkoxy of 1-6 carbon atoms, acyl of 2-7 carbon atoms, aryl or aroyl;

R_3 is hydrogen, alkyl of 1-6 carbon atoms, cycloalkyl, alkoxy of 1-6 carbon atoms, fluorinated alkyl of from 1 to 6 carbon atoms, alkyl sulfonamide of 1-6 carbon atoms, alkyl amide of 1-6 carbon atoms, amino, alkylamino of 1-6 carbon atoms, dialkylmino of 1-6 carbon atoms per alkyl moiety, fluorinated alkoxy of 1-6 carbon atoms, acyl of 2-7 carbon atoms, aryl or aroyl; the process comprising the steps of:

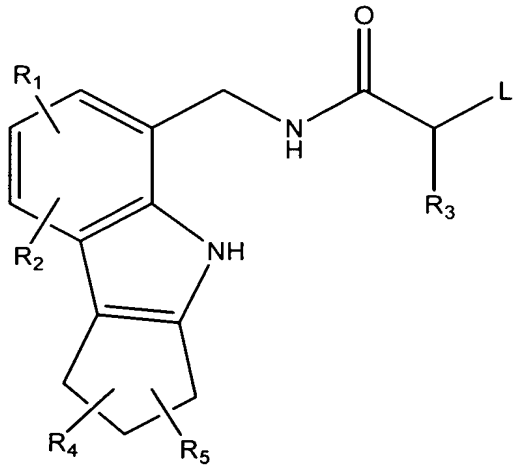
a) acylating a cyclopentaindole methylamine of the formula:



~~wherein R_1, R_2, R_4 and R_5 are~~ with an acylating agent of the formula:

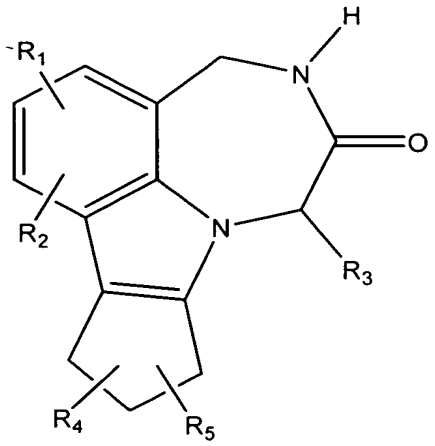


wherein R_1, R_2, R_3, R_4 and R_5 are ~~is~~ as defined above and L represents a leaving group to produce ~~a~~ an acylated compound of the formula:



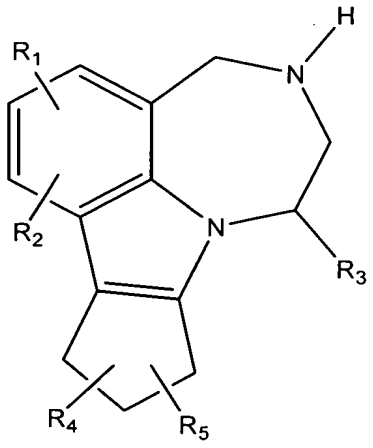
;

b) cyclizing the acylated compound of step a) to produce an optionally substituted Diazabenzo[*cd*]cyclopenta[*a*]azulen-6-one compound of the formula:

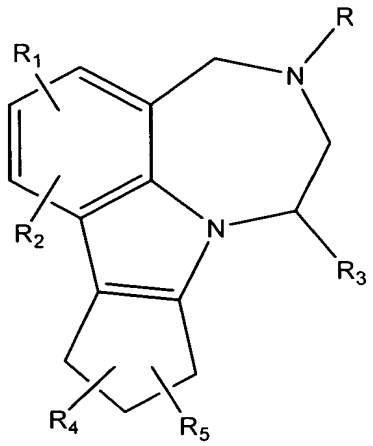


; and

c) reducing the Diazabenzo[*cd*]cyclopenta[*a*]azulen-6-one compound of step b) to produce an optionally substituted Diazabenzo[*cd*]cyclopenta[*a*]azulene compound of the formula:

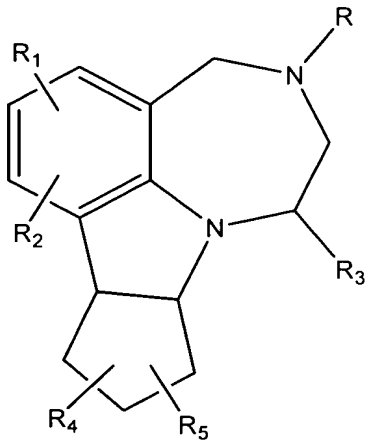


2. (Original) The process of Claim 1 further comprising the step of treating the Diazabenzo[*cd*]cyclopenta[*a*]azulene compound of step c) of Claim 1, above, with an alkylating agent to provide an alkylated compound of the formula:



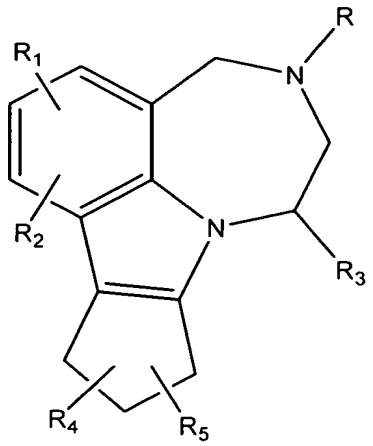
wherein R is an alkyl group of 1-6 carbon atoms, cycloalkyl of from 3 to 7 carbon atoms, or -CH_2-cycloalkyl of from 3 to 7 carbon atoms; and R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 1.

3. (Original) A process of Claim 2 further comprising the step of treating the alkylated compound of Claim 2 with a reducing agent to produce a compound of the formula:



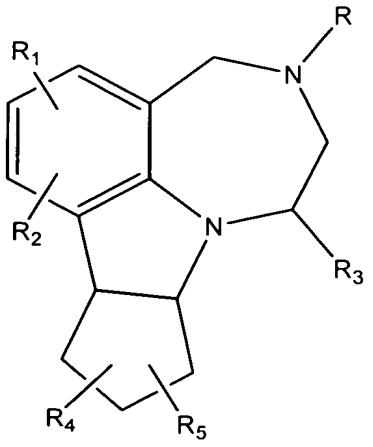
wherein R, R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 2.

4. (Original) The process of Claim 1 further comprising the step of treating the Diazabenzo[*cd*]cyclopenta[*a*]azulene compound of step c) of Claim 1, with an acylating agent to produce an acylated compound of the formula:



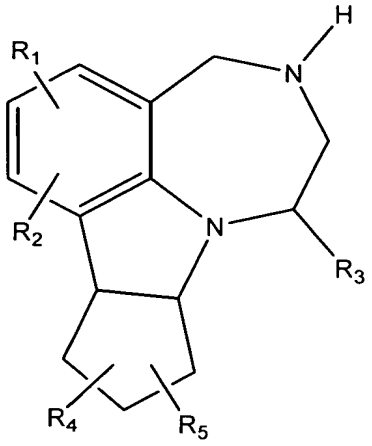
wherein R is an acyl group of from 2 to 7 carbon atoms and R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 1.

5. (Original) A process of Claim 4 further comprising the step of treating the acylated compound of Claim 4 with a reducing agent to produce a compound of the formula:



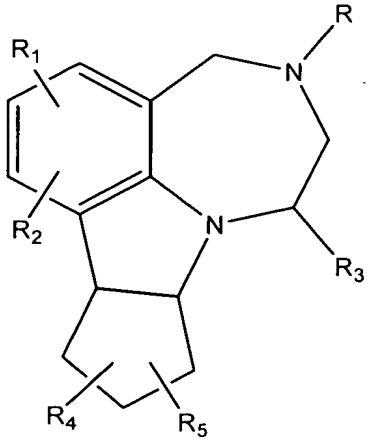
wherein R, R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 4.

6. (Original) A process of Claim 1 comprising a further step of treating the optionally substituted Diazabenzo[*cd*]cyclopenta[*a*]azulene compound of step c) of Claim 1 with a reducing agent to provide a reduced compound of the formula:



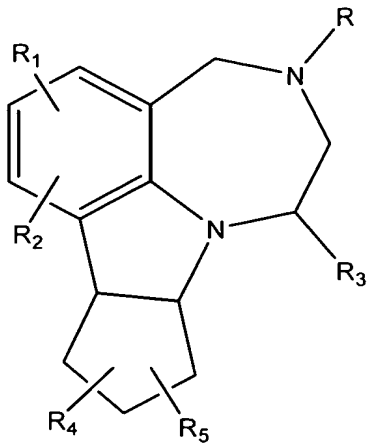
wherein R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 1.

7. (Original) A process of Claim 6 further comprising the step of treating the reduced compound of Claim 6 with an alkylating agent to provide an alkylated compound of the formula:



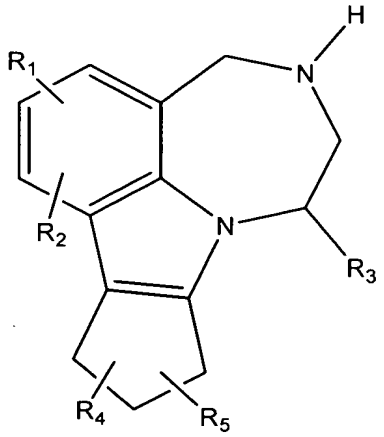
wherein R is an alkyl of 1-6 carbon atoms, cycloalkyl of from 3 to 7 carbon atoms, or -CH_2-cycloalkyl of from 3 to 7 carbon atoms; and R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 1.

8. (Original) A process of Claim 6 further comprising the step of treating the reduced compound of Claim 6 with an acylating agent to provide an acylated compound of the formula:



wherein R is an acyl group of from 2 to 7 carbon atoms; and R_1, R_2, R_3 and R_4 and R_5 are as described in Claim 1.

9. (Original) A process of Claim 1 further comprising the step of treating the compound of the formula:



wherein R, R_1, R_2, R_3, R_4 and R_5 are as defined in Claim 1, with a pharmaceutically acceptable inorganic or organic acid to form a pharmaceutically acceptable salt of the compound.

10. (Original) The process of Claim 9 wherein the pharmaceutically acceptable inorganic or organic acid is selected from the group of hydrochloric acid, hydrobromic acid, hydroiodic acid, sulfuric acid, phosphoric acid, nitric acid, acetic acid, propionic acid, citric acid, maleic acid, malic acid, tartaric acid, phthalic acid, succinic acid, methanesulfonic acid,

toluenesulfonic acid, napthalenesulfonic acid, camphorsulfonic acid, and benzenesulfonic acid.

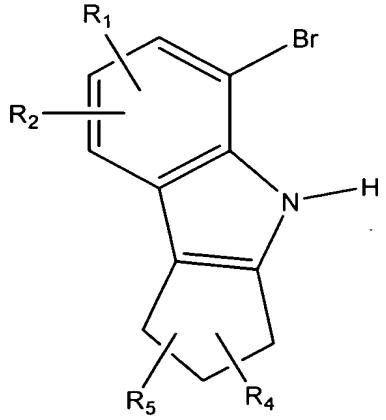
11. (Original) A process of Claim 1 wherein each of R, R_1, R_2, R_3, R_4 and R_5 are hydrogen.

12. (Original) A process of Claim 1 wherein R_1 and R_3 are hydrogen and R, R_2, R_4 and R_5 are as defined in Claim 1.

13. (Original) A process of Claim 1 wherein R_1, R_3 and R_5 are hydrogen and R, R_2 and R_4 are as in Claim 1.

14. (Original) A process of Claim 1 wherein R, R_1, R_2, R_3, and R_4 are hydrogen and R_5 is as defined in Claim 1.

15. (Original) A compound of the formula:



wherein R_1, R_2, R_4 and R_5 are as defined in Claim 1.

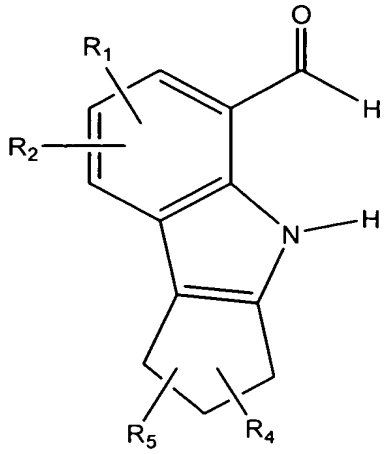
16. (Original) A compound of Claim 15 which is selected from the group of:
5-Bromo-1,2,3,4-tetrahydro-cyclopenta[*b*]indole;

5-Bromo-3-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole;

5-Bromo-2-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole; and

5-Bromo-1-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole.

17. (Original) A compound of the formula:



wherein R_1, R_2, R_4 and R_5 are as defined in Claim 1.

18. (Original) A compound of Claim 17 which is selected from the group of:

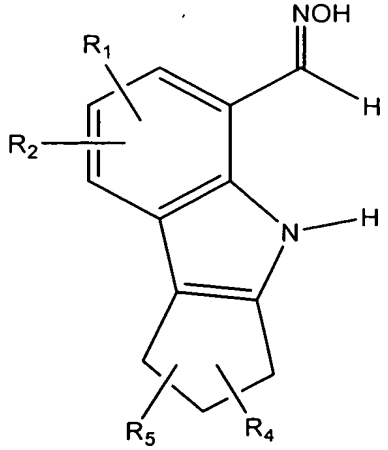
1,2,3,4-Tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde;

3-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde;

2-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde; and

1-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde.

19. (Original) A compound of the formula:



wherein R_1, R_2, R_4 and R_5 are as defined in Claim 1.

20. (Original) A compound of Claim 19 which is selected from the group of:

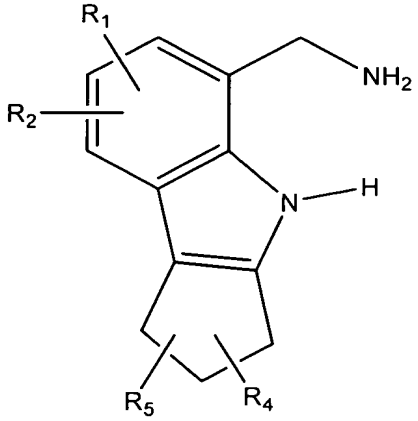
1,2,3,4-Tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde oxime;

3-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde oxime;

2-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde oxime; or

1-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indole-5-carbaldehyde oxime.

21. (Original) A compound of the formula:



wherein R_1, R_2, R_4 and R_5 are as defined in Claim 1.

22. (Original) A compound of Claim 21 which is selected from the group of:

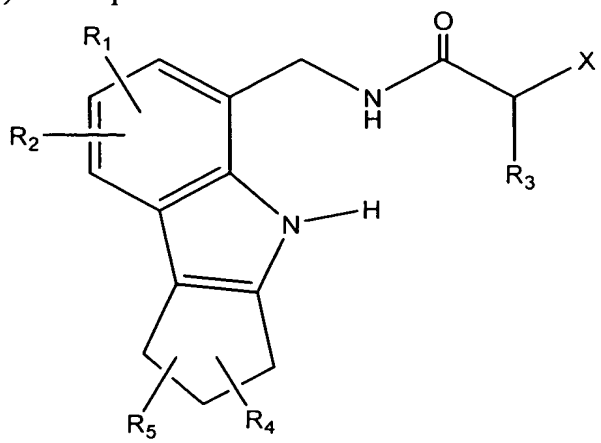
C-(1,2,3,4-Tetrahydro-cyclopenta[*b*]indol-5-yl)-methylamine;

C-(3-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-yl)-methylamine;

C-(2-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-yl)-methylamine; or

C-(1-Methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-yl)-methylamine.

23. (Original) A compound of the formula:



wherein R_1, R_2, R_3, R_4 and R_5 are as defined in Claim 1 and X is selected from Cl, Br or I.

24. (Original) A compound of Claim 23 which is selected from the group of:

2-Chloro-*N*-(1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Chloro-*N*-(3-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Chloro-*N*-(2-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Chloro-*N*-(1-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Bromo-*N*-(1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Bromo-*N*-(3-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Bromo-*N*-(2-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Bromo-*N*-(1-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

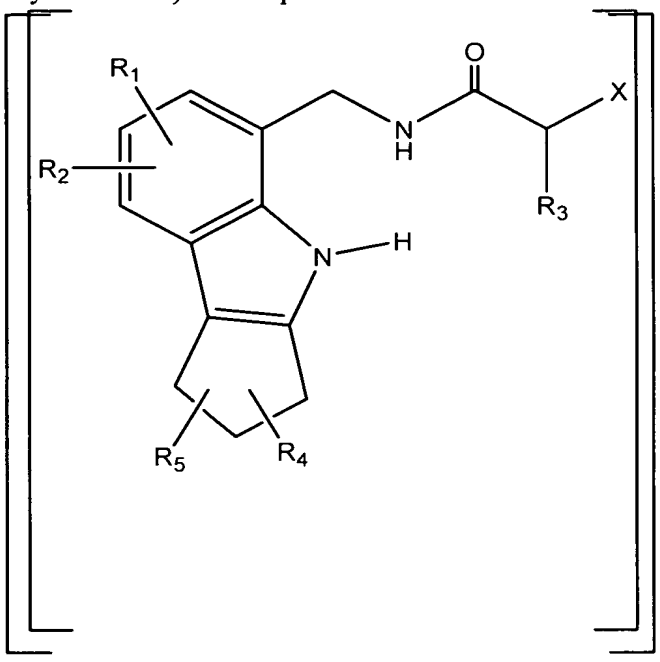
2-Iodo-*N*-(1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

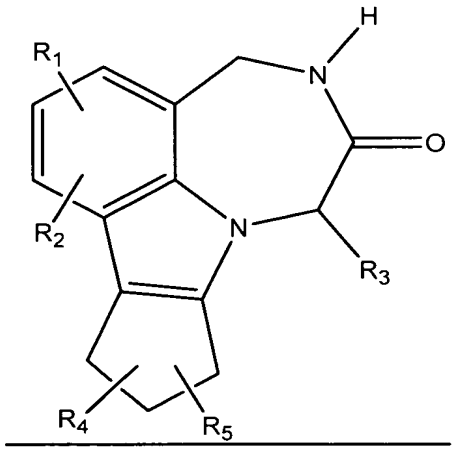
2-Iodo-*N*-(3-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide;

2-Iodo-*N*-(2-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide; or

2-Iodo-*N*-(1-methyl-1,2,3,4-tetrahydro-cyclopenta[*b*]indol-5-ylmethyl)-acetamide.

25. (Currently amended) A compound of the formula:





wherein R_1, R_2, R_3, R_4 and R_5 are as defined in Claim 1 ~~and X is selected from Cl, Br or I~~.

26. (Original) A compound of Claim 25 which is selected from the group of:

4,5,9,10-Tetrahydro-8*H*-5,7a-diaza-benzo[*cd*]cyclopenta[*a*]azulen-6-one;

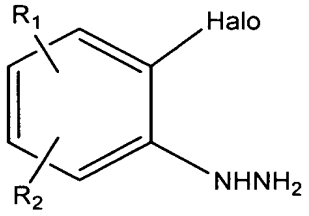
8-Methyl-4,5,9,10-tetrahydro-8*H*-5,7a-diaza-benzo[*cd*]cyclopenta[*a*]azulen-6-one;

9-Methyl-4,5,9,10-tetrahydro-8*H*-5,7a-diaza-benzo[*cd*]cyclopenta[*a*]azulen-6-one; and

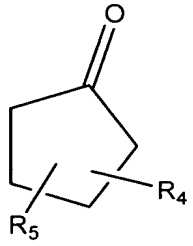
10-Methyl-4,5,9,10-tetrahydro-8*H*-5,7a-diaza-benzo[*cd*]cyclopenta[*a*]azulen-6-one.

27. (New) The process of Claim 1 wherein the cyclopentaindole methylamine is formed by the steps comprising:

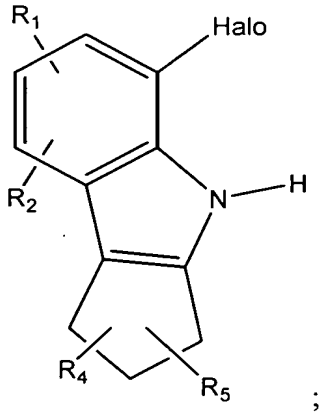
i) allowing an optionally substituted 2-halophenylhydrazine compound of the formula:



to react with an optionally substituted cyclopentanone compound of the formula:



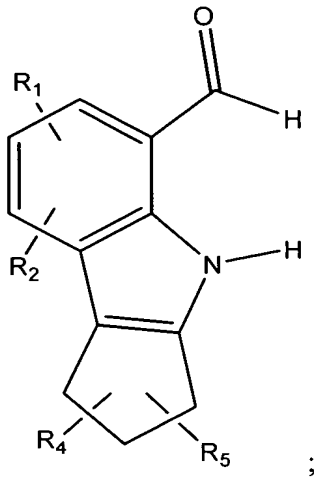
to produce a 5-halo-cyclopenta[*b*]indole compound of the formula:



;

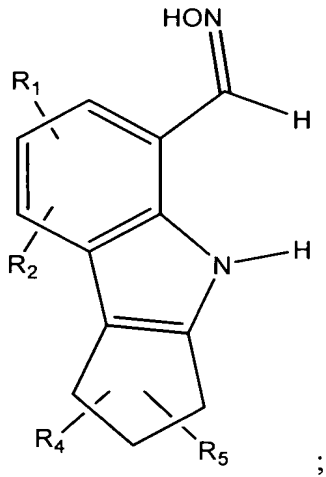
wherein R_1, R_2, R_4 and R_5 are defined as in Claim 1 and Halo is a halogen atom;

ii) converting the 5-halo-cyclopenta[*b*]indole compound of step i) to an optionally substituted cyclopenta[b]indole aldehyde of the formula:



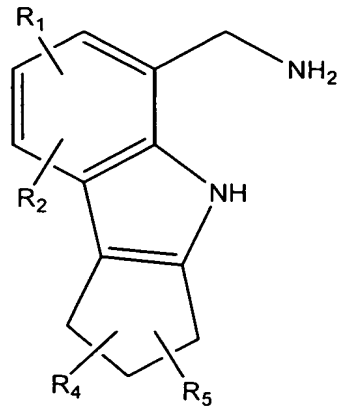
;

iii) converting the optionally substituted cyclopenta[*b*]indole aldehyde of step ii) to a corresponding optionally substituted cyclopenta[*b*]indole-5-carbaldehyde oxime of the formula:



; and

iv) treating the optionally substituted cyclopenta[*b*]indole-5-carbaldehyde oxime of step iii) with a reducing agent to provide a cyclopentaindole methylamine of the formula:



wherein R_1, R_2, R_4 and R_5 are defined as in Claim 1.